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<p>98-036264/04 A97 E17 MITK 96.04.25 MITSUI TOATSU CHEM INC *JP 09290163-A 96.04.25 96JP-105127 (97.11.11) B01J 31/12, C07C 29/38, 33/02, 33/18, 67/293, 69/145, 69/21, C07D 213/48 // C07B 61/00, C08F 14/26, 16/24</p> <p>Acid catalyst - contg. a metal supported polymer compound, useful for producing allyl alcohol(s) by reacting a carbonyl compound and an allylation agent</p> <p>C98-012406</p> <p>An acid catalyst contg. a metal supported polymer compound having a repeating unit of formula (1):</p> $(([-(-CF_2-CF_2)_n-CF-CF_2]_y)_rO-CF(R_1)-CF(R_2))_m-O-CF(R_1)-CF(R_2)-SO_3}_p M^{3+}X_q (1)$ <p>R₁, R₂ = F or perfluoroalkyl of 1-8C; M = a group III metal, or lanthanide metal; X = organic or inorganic anion; m = a positive integral number between 1 and 20; n = a positive integral number between 1 and 30; y = a positive integral number between 1 and 30; p = a positive integral number between 1 and 3;</p>	<p>A(1-D9, 10-E1, 12-W11K) E(10-A9B8, 10-C4F, 10-C4J2, 31-C, 31-K5C, 34-E) A0354</p> <p>q = a positive integral number between 0 and 2.</p> <p>USE</p> <p>The acid catalyst is useful for producing allyl alcohols by reacting a carbonyl compound and an allylation agent.</p> <p>ADVANTAGE</p> <p>The acid catalyst can be easily produced and after being used for production of an allyl alcohol etc, it can be easily recovered and re-used.</p> <p>PREFERRED CONDITIONS</p> <p>M in the formula (1) is pref scandium (III) (most pref), yttrium (III), lanthanum (III), cerium (III), or samarium (III). X is pref an anion of such an inorganic acid as nitric acid, sulphuric acid, phosphoric acid, hydrochloric acid and perchloric acid or such an organic acid as trifluoromethylsulphuric acid, acetic acid and trifluoroacetic acid.</p>
<p>PREPARATION</p> <p>The acid catalyst is prepared by reacting H type polymer compound having a unit of formula (2):</p> $(([-(-CF_2-CF_2)_n-CF-CF_2]_y)_rO-CF(R_1)-CF(R_2))_m-O-CF(R_1)-CF(R_2)-SO_3H (2)$ <p>and an organic acid or inorganic acid salt of group III metal or lanthanide metal of formula (3):</p> $M_sX_s (3)$ <p>in the presence of a polar solvent;</p> <p>r = 1 or 2; s = 1, 2 or 3.</p> <p>EXAMPLE</p> <p>25.0 g of nafion and 30 ml of acetonitrile were added to 200 ml flask and heated to 50°C with stirring. 2.6 g of scandium trichloride dissolved in 30 ml of acetonitrile was added thereto dropwise over 1 hour, then heated further to 95°C and subjected to reaction at the same temperature for 10 hours. Then the soln was cooled to 25°C</p>	<p>and filtered under reduced pressure and washed with acetonitrile and dried under reduced pressure at 90°C to give 25.4 g of an acid catalyst of the present invention .(SV) (8pp055DwgNo.0/0)</p> <p>JP 09290163-A+</p> <p>JP 09290163-A</p>